University of Massachusetts Occasional Papers in Linguistics

Volume 24 *UMOP 22: New Perspectives on Language Acquisition* Article 5

1998

The Acquisition of Verb Movement in Hebrew

Shalom Zuckerman
University of Groningen

The Acquisition of Verb Movement in Hebrew

Shalom Zuckerman

University of Groningen

0. Introduction

The following topicalization structures are optional in Hebrew:

(1) bananot axal Dani etmol
Bananas ate Dani yesterday

(2) bananot Dani axal etmol
Bananas Dani ate yesterday

The sentence in (1) represents a structure in which a non-subject appears in the initial position of the sentence and the verb is in second position. This type of structure which resembles structures in Germanic V-2 languages was referred (by Shlonsky 1995) as "Triggered Inversion". Following Shlonsky (1995), I take the initial element in this structure to be located in [spec CP] and the verb to be located in C, as a result of I- to -C movement.

I will begin with a short description of my results: through a repetition experiment, I showed that children have problems with production of the various Triggered Inversion structures (with various elements in the initial position), i.e: when asked to repeat a sentence such as (1) above, the children failed to do so in a significant number of times and produced the non-inversion structure as (2) above, instead.

From one point of view this result is surprising since usually child language contains more optional operations than their target adult language, namely children's grammar allows optionality in operations which are obligatory in the adult grammar (eg. optional infinitives, null subjects, etc.). The phenomenon that is described here is, therefore, unique in that children treat an operation which is optional in the adult language as if it was obligatory.

New Perspectives on Language Acguisition

1. Theoretical Background

In order to account for this phenomenon I adopt the principles of the Minimalist Program (Chomsky 1995) and the Theory of Parameters (Hyams 1986).

According to the minimalist program, lexical elements are pulled out of the lexicon fully inflected and carrying features which mark their morphological and functional properties. In a second stage the lexical elements move upwards the phrase marker in order to let their features be checked in the functional domain of the phrase marker.
This derivation process is ruled by *conditions of economy* which generally demand that the derivation will be carried out with as few steps as possible.

In order to account for the variation of word order among different languages, the minimalist program adopts Pollock's (1989) intuition of *features' strength.* According to this idea, each of the functional features can be set on one of two values: 'weak' or 'strong'. The value of a functional feature controls the timing of the movement of the lexical element which carries the respective feature - if the functional feature is strong, movement will take place before spellout and therefore will be overt. If it is weak, movement will be delayed and will take place after spellout and therefore will be covert. An assumption of the minimalist program is that delayed movement is "cheaper" than overt one.

According to the minimalist program languages differ only in regard to the values of the functional features. This means that the values of the functional features are the only part of the grammatical system (as far as word order is concerned) that varies among languages.

What implications might this view have on language acquisition?

If the features' values are the only part of the system which is a subject for variation, we might assume that it is the only part of the system that children must acquire on the basis of input data from their environment. In terms of the Theory of Parameters (Hyams 1986), we might say that the functional features are the subject of parametrization and that the child's primary mission is to set these parameters to their correct values (strong or weak) in her native language.

2. Main Claim

Since the child must set the features' values based on input data, we must assume that there are intermediate stages in which values of certain features are not yet set to their correct values. This must be due to one of two reasons:

1. Lack of relevant input data (e.g:structures which are not frequent in the spoken language).
2. contradicting input data (e.g: structures which are optional, or appear to be optional in the spoken language).

The question I wish to raise here is: what do children do in this cases where a certain feature's value is not yet set?

My answer to this question, which is also the main claim of this work, is the following: *In cases where the system does not hold a definite value for a certain feature, it will assume a*

default value - 'weak' , to that feature. I shall refer to this claim as the ' Weak Default Hypothesis'.

3. Justification for the main claim

1. Economy: principles of economy are basic to the linguistic apparatus and they apply in different levels of representation. We might say that the grammatical system shows a general tendency for economy. tendency for economy is also not strange to other modules of the cognitive system. As far as movement is concerned, the principles of economy instruct the system to delay movement as long as possible (the principle: procrastinate).

Following this line of thought we can predict that in cases where the child's grammar does not hold a definite value for a certain feature, it will assume this feature to be weak and by that avoid unnecessary overt 'expensive' movement.

3.1 Empirical evidence - existing data

Through a superficial look at some of the major phenomena in language acquisition (eg: root infinitives,null subjects,non SAI,no V2, etc.), we might notice a pattern that justifies the weak default hypothesis: In all these phenomenon the children either avoid movement when one should take place or omit elements in places where they are necessary but children never move elements when movement is forbidden and never add elements when they are unnecessary. few examples are given below:

3.1.1 Root infinitives

Children are reported (Wexler 1994) to optionally use an infinitive as a main verb. this results with the verb remaining in situ instead of moving to a higher functional position. However, the opposite error, i.e: optional use of an inflected verb as an infinitive, is (as far as I know) not attested, eg., we see errors such as (3) but not (4) below:

(3) Papa schoenen wassen (Dutch, Weverink 1989)
Daddy shoes wash(inf)

(4) # Papa wilt wast schoenen
Daddy wants washes shoes

3.1.2 Null subjects

In languages where overt subject is obligatory, children sometimes omit the subject:

(5) Want look a man (CHILDES, from Brown 1973)

(6) Veux pas lolo (French, Pierce 1992)
want not water

But the opposite error, i.e: children using extra overt subject in null subject languages, is (as far as I know) not attested.

3.1.3 No V-moment to C

In languages where the verb is obliged to move to C over the subject (i,e: V2 or SAI), children sometimes fail to perform this inversion resulting in a non-inversion construction (the verb in these cases can appear as inflected or as an infinitive):

(7) a. Where mommy go?
b. What you can do?

(8) a. Kuhe das essen solln (German, Clahsen & Penke 1992)
Cows that to eat must
b. Das auch nicht schmeckt nicht (German, Verrips & Weissenborn 1992)
This also not tastes not

But, again, the opposite error is not attested,i.e: children do not raise the verb to C in cases where this movement is forbidden:

(9) # Today does / can mommy go

(10) # This must cows eat

To conclude, based on the assumptions that overt movement is more 'expensive' than covert movement or nonmovement, and that overt elements are more expensive than null elements, and based on the observation made above, we might reach the following conclusion: **children make only mistakes that are 'cheaper' than the target structure.**

This conclusion can be taken as an empirical support for the system's tendency for economy and for the direction proposed by the weak default hypothesis.

4. Predictions

The weak default hypothesis has three major predictions:

1. In languages where a specific operation is optional (or appears to be optional), there might be a stage in which children will prefer the structure that does not contain overt movement on the one that contains overt movement.

2. In languages where a specific feature is strong, there might be a stage in which children will assume this feature to be weak and therefore, fail to perform the movement for which that feature is responsible.
3. In languages where a specific feature is weak children will **not** assume it to be strong and therefore, an unnecessary overt movement will not be attested in child language.

5. The experiment

The experiment described here relates to the first prediction regarding optional movement. The purpose of the experiment was to check whether children can produce (in this case - repeat correctly) the various 'triggered inversion' constructions mentioned above, which are optional in Hebrew. Sentences (1) and (2) which demonstrate the optionality are repeated here as (11) and (12) for convenience:

(11) bananot axal Dani etmol
Bananas ate Dani yesterday

(12) bananot Dani axal etmol
Bananas Dani ate yesterday

Subjects: 5 Hebrew speaking children (mean age - 3:11)
Method: The children were introduced to a puppet. The puppet was presented as a shy one who does not speak to adults but only to children. The experimenter than said that he wants to tell the puppet a story but the puppet won't listen and proposed that he will tell the story to the child and the child will repeat it to the puppet. The story was first read in full to the child and then was read again sentence by sentence allowing the child to repeat after each sentence. The sentences in the story were of the various triggered inversion structures mixed with two types of control structures (see below). All the sentences contained 5-8 words. Two stories were read in two different sessions.

The first story contained the following structures: adverb as a trigger with the verb in second position (7 sentences), as in (13).

(13) ve-az hotzi'a ima me-ha-kis shela od matana
and then took-out mother from the pocket of her another present
'and then mother took out of her pocket another present'

WH - questions with the verb in second position (6 sentences), as in (14).

(14) ma osa ima sheli ba-avoda ?
what does mother of me in the work
'What does my mother do at work ?'

Direct speech with the verb in second position (6 sentences), as in (15).

(15) hi halxa la-avoda " amar aba shel Dani.
she went to work " said father of Dani.
'She went to work" said Dani's father '

Control - nonmovement sentences (6 sentences), as in (16).

(16) aval ha-matana lo hayta bishvil Dani
but the present neg was for Dani
'But the present wasn't for Dani '

The second story contained the following structures: direct speech with a preverbal subject {verb down} (6 sentences), as in (17).

(17) ra'ayon metzuyan " ha-xaverim amru be-simxa
idea excellent " the friends said in joy
'Excellent idea " the friends said happily'

PP as a trigger with the verb in second position (6 sentences), as in (18).

(18) al ha- shulxan sama Dina mapa levana.
on the table put Dina tablecloth white.
'On the table Dina put a white tablecloth'

NP as trigger with the verb in second position (5 sentences), as in (19).

(19) et ha-mazlegot sama Dina Be-tzad smol.
acc the forks put Dina in side left.
'The forks Dina put on the left side'

Relative clause with a postverbal subject (5 sentences), as in (20).

(20) Dina lakxa et ha- praxim she-matza Yosi leyad ha-aron.
Dina took acc the flowers that found Yosi next to the cupboard.
'Dina took the flowers that Yosi found next to the cupboard.

Control - nonmovement (5 sentences), as in (21).

(21) ha-xaverim nixnesu la-mitbax ve - hitxilu la-avod.
the friends entered to the kitchen and started to work.
'The friends entered the kitchen and started to work.'

Control sentences: two types of control sentences were used in the experiment. The first type was a structure in which no movement had occurred (see examples (16) and (21) above). This control sentences came to check the ability of the child to repeat a sentence correctly.

The second type was a topicalized direct speech structure (see examples (15) and (17) above). Although this structures appear to look like Triggered inversion structures, we have two reasons to believe that it is not of the triggered inversion type, i.e.: that the verb in this constructions does not move to C.

1. Inversion is preferred. - Although the inversion in this structure is also optional in Hebrew (as it is in English), in contradiction to the triggered inversion, in direct speech, structures that contain subject verb inversion are preferred than the ones that do not contain inversion.
2. Collins and Branigan (1995), investigating the topicalization of direct speech (to which they refer as 'quotative inversion') reached the conclusion that in this structure, the verb does not move to C but to a lower head position.

The topicalized direct speech control sentences were used, therefore, as a comparison with the triggered inversion structures.

Results: All together the children repeated 227 sentences, out of them at least 20 sentences of each structure and 44 non-movement control structures. In few cases children refused to repeat a sentence (but never a control sentence), saying that " it is too hard" or that they " don't remember" - this cases were not included in the analysis.

The children failed in a significant number of times to repeat correctly the triggered inversion structures, instead they produced a structure that contained no subject verb inversion. This was the only type of error that was attested in regard to word order. It is important to emphasize here, that in all this cases of misrepetition the children always produced the verb in its correct 'down' position (i.e: they placed the verb in I), and never in a different position.

The non-movement control sentences were repeated correctly in 100% of the cases and the topicalized direct speech sentences in 96% of the cases. see table 1 below.

In the case of direct speech with a preverbal subject (see example (17) above), the children failed to repeat correctly and moved the verb up (!) to the second position in 70% percent of the cases.

Table 1 below presents the percentages of the cases in which the children had failed to raise the verb and produced it below the subject. Significance was calculated by a X^2 test, each of the groups was compared to the nonmovement control group (df=1), critical value was 6.64 for P=0.005.

Table 1

Type of trigger	% of failure to raise the verb	
Non Movement	0 %	
Direct Speech	4 %	
PP	23.5 %	p<0.005
NP	33 %	p<0.005
Relative Clause	75 %	p<0.005
WH Questions	30.5 %	p<0.005
Adverbs	43 %	p<0.005

Conclusions: The perfect repetition of the non movement control sentences shows that the subjects are able to repeat sentences of the relevant length.

The fact that the only type of error that was attested was the noninversion error in the triggered inversion structures, directs us to identify the children's' problem as a problem with moving the verb to C and not as a general problem with topicalized constructions.

The perfect repetition of the direct speech sentences emphasizes this conclusion and shows that the problem is not with inversion in general, but rather with the movement of the verb to C.

The fact that in all cases of misrepetition, the children produced the verb in it's correct base position, shows that they comprehended the inverted sentences as ones that contain verb movement, but nevertheless they failed to produce this movement. This fact can be taken as supporting the view presented in this paper, that the children capture the optionality of this structure (and therefore the relation between the two optional verb positions), but prefer to produce the less costly option out of the two.

The results support the prediction that where movement is optional, children prefer the option that contains no overt movement (i.e.: they prefer to assume that the relevant feature is weak).

This conclusion is supported by the response of one of the children: when the experimenter insisted with one of the girls, trying to make her repeat the inverted structure (even telling her with which words to begin the sentence), she responded: " I can't !".

6. Optional head movement in English

In order to further test the prediction of the weak default hypothesis regarding optional movement, I wish to turn now to the case of negated questions in English. When asking a negated question, English appears to allow an optional movement of the negative element as demonstrated below:

(22) a. What don't you like to eat
b. What do you not like to eat

As in the optional movement in Hebrew discussed above, also here one of the optional structures is prominent in the spoken language (22a) and the other in the formal language (22b).

Guasti Wexler and Thornton (1995) conducted an elicitation experiment in which they showed that children have extreme difficulties with producing negated questions that contain movement of the negation element to C (as in 22a above). Their results showed that the problem was specifically with raising the negation rather than the auxiliary.

Viewing the structure in (22) as an optional one, allows us to interpret the results of Guasti et al (1995) as supporting the prediction of the weak default hypothesis in regard to optional movement, namely: the children, facing two options regarding the overt movement of the negation element to C, prefer to chose the 'cheaper' option that does not contain overt movement. It is important to point out here that unlike in Hebrew, the 'cheaper' structure here is the formal one (of which children get less input) and not the spoken one. This fact shows us that the better predictor for the child's preference is the movement involved, rather than the frequency of the structure in the spoken language.

In terms of parameter setting we would say that the children, facing contradicting evidence, chose to assume the value 'weak' for the feature which is responsible for this movement and by that avoid unnecessary overt movement.

Bellugi (1971) described the acquisition of questions in English as a four stages process: first children's questions tend to show a lack of SAI, later children seem to control SAI in y/n questions but not in WH-questions. The next stage is the control of both y/n and WH questions but then children still fail to perform negated questions.

If we assume that wh and y/n questions are controlled by two different features, the weak default hypothesis can account for all this gradual acquisition of questions as follows: in the first stage all the features which are responsible for the inversion are assumed by the child to be weak as a default. In the second stage the feature responsible for SAI in y/n questions is set to it's correct 'strong' value. In the third stage also the feature responsible for SAI in WH questions is set to 'strong', but the feature responsible for the raising of the negation is still assumed to be 'weak'. Only in the fourth - adult like - stage all the relevant features are set to their correct 'strong' value.

7. Summary

In this paper I proposed a hypothesis for the acquisition of movement operations (specifically head movement). My main assumption was that in lack of sufficient evidence regarding the strength value of a certain feature, children will assume this value to be weak as a default.

The paper dealt with the case of optional movement which supply the child with contradicting evidence in regard to a specific structure. As a result of this contradicting evidence, I claimed, the child fails to set the relevant parameter (feature) to it's correct value and assumes therefore, this value to be 'weak' as a default. The consequence of this default assumption is that the child prefers to produce the less costly structure out of the two options available to her.

New data from a repetition experiment with Hebrew speaking children and existing data from the acquisition of negated questions in English showed to support this hypothesis.

Further research is required in order to test the predictions of the weak default hypothesis.

* I wish to thank prof. Yosef Grodzinski for his great help and support, Tel-Aviv University, and the BCN school of the University of Groningen, who supported the experiment and the preparation of this paper, and Bart Hollebrandse and the people of U-mass for the hospitality and the organisation of the conference.

References

Bellugi, U. , 1971 "Simplification in Children's language", in R. Huxley and E. Ingram (eds.) *Methods and Models in Language Acquisition*. New York: Academic Press.

Chomsky, N. 1995, *The Minimalist Program*. MIT Press.

Clahsen, H. and M. Penke, 1992 "The Acquisition of Agreement Morphology and its Syntactic Consequences", in J.M. Meisel (ed.) *The Acquisition of Verb Placement*, 181-223. Kluwer Academic Publishers, The Netherlands.

Collins, C. and Braningan, 1995, "Quotative Inversion", MS Cornell University.

Guasti, M. T. , R. Thornton and K. Wexler, 1995. "Negation in Children's Questions: The case of English." Proceedings of the 19th Boston Conference on Language Acquisition and Language Development, ed by D. Maclaughlin & S. McEween, 229-239. Somerville: Cascadilla Press.

Hyams, N. 1986, *Language Acquisition and the Theory of Parameters.* Reidel Publishing Company, Dordrecht.

Pollock, J. Y. 1989. "Verb Movement, Universal Grammar and the Structure of IP". Linguistic Inquiry, **20**, 365-424

Shlonsky, U. 1995, *Clause Structure and Word Order in Hebrew.* University of Geneva.

Verrips M. and J. Weissenborn, 1992, "Routs To Verb Placement in Early German and French", in J.M. Meisel (ed.) The Acquisition of Verb Placement,283-331. Kluwer Academic Publishers, The Netherlands.

Wexler, K. 1994 "Optional Infinitives, Head Movement and The Economy of Derivations", in D. Lightfoot and H. Hornstein, (eds.), *Verb Movement* , Cambridge University Press, Cambridge England.

Shalom Zuckerman
Groningen Graduate School for Behavioral and Cognitive Neurosciences
Department of Linguistics
University of Groningen
P.O. Box 716
9700 AS Groningen
The Netherlands

s.zuckerman@let.rug.nl